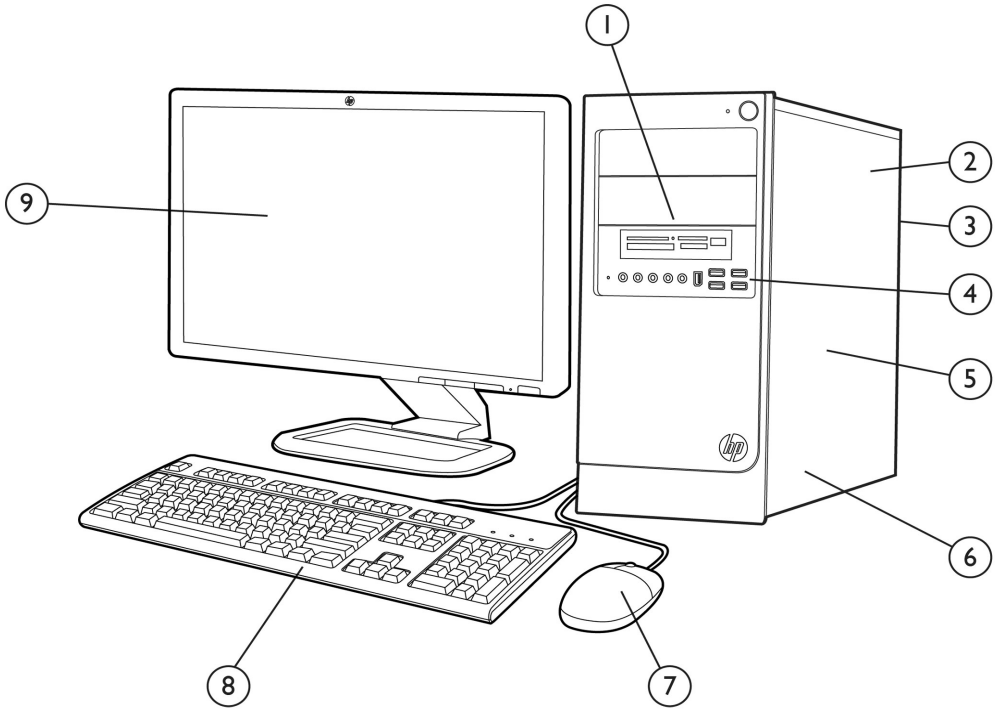
Overview (availability varies by configuration and by country)



1. (2) external 5.25" drive bays for optional optical drives
2. Power Supply (1) external 3.5" drive bay for optional media reader
3. Rear I/O includes: (4 or 6) USB 2.0 ports, RJ-45 network interface, PS2 port, Serial Port, DVI-D and VGA video interfaces, microphone jack, audio in/out jacks, 5.1 channel audio
4. Front I/O includes: (2) USB 2.0 ports, dedicated headphone output, microphone jack
5. (2) internal 3.5" hard drive bays
6. (2) PCI slots, (1) PCIe x1 slots, (1) PCIe x16 slot
7. USB or PS2 Scroll Mouse
8. HP USB or PS2 Standard Value Keyboard
9. Monitor (sold separately)

At A Glance

- Windows 8 versions, Windows 7 versions, Redflag Linux, or Free Linux
- Choice of Intel® (HP Pro 3330/3340) or AMD processor (HP Pro 3335)
- Choice of integrated graphics or ATI or NVIDIA graphics cards
- Up to 16 GB DDR3 SDRAM system memory available standard (depending on model)
- Up to 1 TB 3.0 Gb/s SATA hard drive
- SuperMulti DVD Drive
- Integrated Realtek RTL8171E Gigabit Ethernet Controller
- 8 USB 2.0 ports on HP Pro 3330; 10 USB 2.0 ports on HP Pro 3335/3340
- DVI-D and VGA video ports
- 5.1 audio channels
- Protected by HP Services. Terms and conditions vary by country. Certain restrictions and exclusions apply.

Standard Features (availability varies by configuration and by country)

Processors
(Availability depends on model; list is subject to change)

AMD Sempron Processors with HyperTransport™ Technology: (HP Pro 3335 only)

AMD Sempron X2 190 Processor (2.5 GHz, 1 MB L2 cache, HT bus 3.0)

AMD II X2 Dual Core Processors (HP Pro 3335 only)

AMD Athlon II X2 220 Processor (2.8 GHz, 1MB L2 cache)

AMD Athlon II X2 B26 Processor (3.2 GHz, 2MB L2 cache)

AMD Athlon II X2 B28 Processor (3.4 GHz, 2MB L2 cache)

AMD Athlon II X2 B30 Processor (3.6 GHz, 2MB L2 cache)

AMD Phenom II Triple-Core Processors with HyperTransport Technology: (HP Pro 3335 only)

AMD Phenom II X3 B73 Processor (2.8 GHz, 1.5 MB L2 cache, 7.5 MB Total cache, HT bus 3.0)

AMD Phenom II X3 B75 Processor (3.0 GHz, 1.5 MB L2 cache, 7.5 MB Total cache, HT bus 3.0)

AMD Phenom II X3 B77 Processor (3.2 GHz, 1.5 MB L2 cache, 7.5 MB Total cache, HT bus 3.0)

AMD Phenom™ II X2 Dual Core Processors: (HP Pro 3335 only)

AMD Phenom II X2 B57 Processor (3.2 GHz, 1 MB L2 cache, 7 MB Total cache, HT bus 3.0)

AMD Phenom II X2 B59 Processor (3.4 GHz, 1 MB L2 cache, 7 MB Total cache, HT bus 3.0)

AMD Phenom II X2 B60 Processor (3.5 GHz, 1 MB L2 cache, 7 MB Total cache, HT bus 3.0)

AMD Phenom II X4 Quad Core Processors: (HP Pro 3335 only)

AMD Phenom II X4 B95 Processor (3.0 GHz, 2 MB L2 cache, 8 MB Total cache, HT bus 3.0)

AMD Phenom II X4 B97 Processor (3.2 GHz, 2 MB L2 cache, 8 MB Total cache, HT bus 3.0)

AMD Phenom II X4 B99 Processor (3.4 GHz, 2 MB L2 cache, 8 MB Total cache, HT bus 3.0)

Intel Core i3 Processors: (HP Pro 3330/3340 only)

Intel Core i3-2100 Processor (3.1 GHz, 3 MB cache, 2C/4T)

Intel Core i3-2120 Processor (3.3 GHz, 3 MB cache, 2C/4T)

Intel Core i3-2130 Processor (3.4 GHz, 3 MB cache, 2C/4T)

Intel Core i5 Processors: (HP Pro 3330/3340 only)

Intel Core i5-2320 Processor (3.0 GHz, 6 MB cache, 4C/4T, Turbo)
Up to 3.3 GHz with Intel Turbo Boost Technology

Intel Core i5-2400 Processor (3.1 GHz, 6 MB cache, 4C/4T, Turbo)
Up to 3.4 GHz with Intel Turbo Boost Technology

Intel Core i5-2400s Processor (2.5 GHz, 6 MB cache, 4C/4T, Turbo)
Up to 3.3 GHz with Intel Turbo Boost Technology

Intel Core i5-2500 Processor (3.3 GHz, 6 MB cache, 4C/4T, Turbo)
Up to 3.7 GHz with Intel Turbo Boost Technology

Intel Core i5-2500s Processor (2.7 GHz, 6 MB cache, 4C/4T, Turbo)
Up to 3.7 GHz with Intel Turbo Boost Technology

Intel Core i7 Processors: (HP Pro 3330/3340 only)

Intel Core i7-2600 Processor (3.4 GHz, 8 cache, 4C/8T, Turbo)
Up to 3.8 GHz with Intel Turbo Boost Technology

Intel Celeron Processors: (HP Pro 3330/3340 only)

Intel Celeron G440 Processor (1.6 GHz, 1 MB cache, 1 core)

Intel Celeron G530 Processor (2.4 GHz, 2 MB cache, 2 cores)

Standard Features (availability varies by configuration and by country)

Intel Celeron G540 Processor (2.5GHz, 2 MB cache, 2 cores)

Intel Pentium Processors: (HP Pro 3330/3340 only)

Intel Pentium G620 Processor (2.6 GHz, 3 MB cache, 2C/2T)

Intel Pentium G630 Processor (2.7 GHz, 3 MB cache, 2C/2T)

Intel Pentium G840 Processor (2.8 GHz, 3 MB cache, 2C/2T)

Intel Pentium G850 Processor (2.9 GHz, 3 MB cache, 2C/2T)

Intel Pentium G860 Processor (3.0 GHz, 3 MB cache, 2C/2T)

NOTE: Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families.

Operating System

Preinstalled

Windows 8*
Windows 8 Pro*
Windows 7 Ultimate Edition (32-bit)**
Windows 7 Ultimate Edition (64-bit)**
Windows 7 Professional Edition (32-bit)**
Windows 7 Professional Edition (64-bit)**
Windows 7 Home Premium Edition (32-bit)**
Windows 7 Home Premium Edition (64-bit)**
Windows 7 Home Basic Edition (32-bit)**
Windows 7 Home Basic Edition (64-bit)**
Redflag Linux
Free Linux

* Not all features are available in all editions of Windows 8. Systems may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows 8 functionality. See http://www.microsoft.com.
** System may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See http://www.microsoft.com/windows/windows-7/ for details.

Chipset

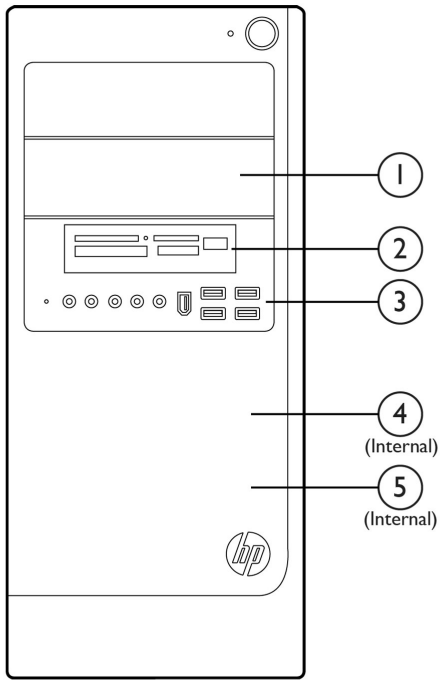
Intel H61 Express Chipset (HP Pro 3330 only)
Intel H67 Express Chipset (HP Pro 3340 only)
AMD 785G Chipset (HP Pro 3335 only)

Standard Features (availability varies by configuration and by country)

Graphics		
Integrated	Intel HD Graphics (HP Pro 3330/3340 only) ATI Radeon HD 4200 Integrated Graphics (HP Pro 3335 only) AMD Radeon HD 6450 1GB DDR3 PCIe x16 Card AMD Radeon HD 6450 512MB DDR3 PCIe x16 Card NVIDIA GeForce 405 512MB DDR3 PCIe x16 Card NVIDIA GeForce 405 1GB DDR3 PCIe x16 Card NVIDIA NVS 300 512MB PCIe x16 Graphics Card NVIDIA NVS 310 512MB PCIe x16 Graphics Card	
System Memory	**Memory Type**	PC3-10600 DDR3 SDRAM (1066/1333MHz) non-ECC
	Expansion Slots	Four (4) DIMM slots for HP Pro 3340 Two (2) DIMM slots for HP Pro 3330/3335
	Maximum Memory*	16 GB for HP Pro 3340, 8GB for HP Pro 3330/3335
	Standard Configurations	2 GB (1 x 2GB) 3 GB (1 x 1GB + 1 x 2GB) 4 GB (1 x 4GB) 4 GB (2 x 2GB) 5 GB (1 x 4GB + 1 x 1GB) 5 GB (2 x 2GB + 1 x 1GB) (HP Pro 3340 only) 6 GB (1 x 2GB + 1 x 4GB) 6 GB (3 x 2GB) (HP Pro 3340 only) 7 GB (3 x 2GB + 1 x 1GB) (HP Pro 3340 only) 8 GB (4 x 2GB) (HP Pro 3340 only) 8 GB (2 x 4GB) (HP Pro 3340 only) 9 GB (2 x 4GB + 1 x 1GB) (HP Pro 3340 only) 10 GB (2 x 4GB + 1 x 2GB) (HP Pro 3340 only) 10 GB (3 x 2GB + 1 x 4GB) (HP Pro 3340 only) 12 GB (2 x 4GB + 2 x 2GB) (HP Pro 3340 only) 12 GB (3 x 4GB) (HP Pro 3340 only) 16 GB (4 x 4GB) (HP Pro 3340 only)
	* For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.	

Standard Features (availability varies by configuration and by country)

Storage	**Hard Drive (SATA) (up to 2 drives supported)**	3.5-inch, 7200 rpm, 3.0 Gb/s SATA Hard Drive (NCQ, SMART):	
		250 GB	750 GB
		500 GB	1 TB
	Media Reader	HP 15-in-1 Media Card Reader	
	Optical Drive (SATA) (up to 2 drives supported)	HP SATA 16X SuperMulti DVD	
Bays	**Internal**	Two (2) 3.5-inch	
	External	Two (2) 5.25-inch; One (1) 3.5-inch	



	Maximum Quantity Supported	Position Supported	Controller
Drive Support			
Media Reader	1	2	Internal USB 2.0 port
SuperMulti DVD Drives	2	1	SATA
3.5" Serial ATA Hard Drives	2	4, 5	SATA

Standard Features (availability varies by configuration and by country)

Slots	# PCI 2.3 slots	2
	# PCI Express x1 slots	1
	# PCI Express x16 slots	1

Communication

Realtek RTL8171E Gigabit Ethernet Controller (all models)

USB Support

EHCI high-speed USB 2.0 controller

Eight (8) internal ports on system board for HP Pro 3330:

- 2 for front ports
- 2 for media card reader
- 4 for rear IO

Ten (10) internal ports on system board for HP Pro 3340/3335:

- 2 for front ports
- 2 for media card reader and other internal device
- 6 for rear IO

External USB 2.0 ports

Front	2
Rear	4 for 3330, 6 for 3340/3335

Interfaces

- One (1) DVI-D video port
- One (1) VGA video port
- One (1) RJ45 network port
- One Serial RS-232 compatible port standard with second port available optionally
- One Parallel port available as an option
- PS/2 Color coded support for keyboard (purple) and mouse (green)
- One (1) audio in; 5.1/ audio channel out; one (1) microphone in

Displays

HP S2231a 21.5-in Wide Monitor
HP S2031a 20-in Wide Monitor
HP s2331a 23-Inch Wide Monitor

Audio

Realtek ALC656 (all models)

Standard Features (availability varies by configuration and by country)

Input Devices	**Keyboard - One of the following** HP PS/2 Wired Keyboard HP PS/2 Standard Keyboard HP USB Wired Keyboard w/ Vol Ctrl HP USB Standard Keyboard **Mouse - One of the following** HP PS/2 Optical Mouse HP USB Optical Mouse

Software	**Preinstalled software (varies by country)**	Microsoft Office 2010 Starter Preloaded (purchase of a Product Key required to activate a full Office 2010 suite)* Microsoft Windows Virtual PC - XP Mozilla Firefox for HP Virtual Solutions 2011 Cyberlink PowerDVD Cyberlink Label Print Cyberlink Power 2 Go Cyberlink Power Director Cyberlink Power Starter Norton Internet Security 2011 (60-day trial) PDF Complete Special Edition HP Power Assistant Credential Manager for HP ProtectTools HP ProtectTools Suite SMB Xobni HP Recovery Manager HP Support Assistant (HPSA)

* Microsoft Office 2010 Starter Preloaded includes reduced functionality versions of Word and Excel, unless a full version suite is added to the configuration at additional cost. Purchase of Product Key required to activate full Office 2010 suite available at participating resellers/retailers and http://www.office.com.
** Supporting software available with certain optical drive configurations.

Power Supply	300W aPFC power supply	
Model	300W aPFC	250 High Voltage
Rated Voltage Range	100 - 240 VAC	100 - 240 VAC
115V/230V Line switch	N/A	N/A

Standard Features (availability varies by configuration and by country)

Service and Support

On-site Warranty[Note 1]: 1-1-1, limited warranty delivers on-site, next business-day[Note 2] service for parts and labor and includes free telephone support[Note 3] 24 x 7. Global coverage[Note 2] ensures that any product purchased in one country and transferred to another non-restricted country will remain fully covered under the original warranty and service offering. One-year onsite and labor are not available in all countries.

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

NOTE 2: On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

NOTE 3: Technical telephone support applies only to HP-configured Compaq and third-party HP-qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

After-Market Options (availability varies by configuration and by country)

NOTE: After-Market Options are TBD.

System Unit Specifications

System Unit	**Dimensions** (HxWxD)	15.08 x 6.82 x 16.58 in 382.3 x 173.2 x 421.1 mm	
	Weight	22 lb (10Kg)	
	Packaging Dimensions (LxWxH)	20.6 x 19.6 in x 10.3 in 522 x 498 x 262 mm	
	Shipping Weight	27.5 lb (12.5 kg)	
	Temperature	Operating	41° to 95° F (5° to 35° C)
		Non-operating	-22° to 149° F (-30° to 65° C)
	Relative Humidity	Operating	15% to 90% (non-condensing at ambient)
		Non-operating	15% to 90% (non-condensing at ambient)
	Shock	Operating	40 G, half-sine
		Non-operating	35G, T-Shock, 165 cm/sec half sine, 2-3 ms
	Maximum Altitude (unpressurized)	Operating	10,000 ft (3048 m)
		Non-operating	30,000 ft (9144 m)

For accessibility information on HP products, please visit: http://www.hp.com/accessibility.

Unit Environment and Operating Conditions

General Unit Operating Guidelines

- Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that unit is operated within the specified operating range.
- Leave a 4 in (10.2 cm) clearance on all vented sides of the computer to permit the required airflow.
- Never restrict airflow into the computer by blocking any vents or air intakes.
- Do not stack computers on top of each other or place computers so near each other that they are subject to each other's re-circulated or preheated air.
- Occasionally clean the air vents on the front, back, and any other vented side of the computer. Lint, dust and other foreign matter can block the vents and limit the airflow.
- If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply.

Eco-Label Certifications & declarations

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- IT ECO declaration

* This product conforms to the examination standards (2003 version) under JEITA's ' Label System.'

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Microtower model is based on a typically configured product

Energy Consumption	**230 VAC**
Normal Operation	70.8 W
Sleep (Energy Star low power mode)	1.77 W
Off	0.72 W

Heat Dissipation* **230 VAC**

System Unit Specifications

Normal Operation	57.2 W or 195.2BTU/Hr
Sleep	1.30 W or 4.44BTU/Hr
Off	0.54 W or 1.84BTU/Hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

System Fan on with active graphic card	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	4.1	30
HDD random seek	4.4	32

Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight

Battery size: CR2032 (coin cell)
Battery type: Lithium

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2002/95/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 0 % post-consumer recycled plastic (by wt.)
- This product is minimum 65 % recyclable when properly disposed of at end of life.

Packaging Materials

- External: (Carton)
  - 1583g
- Internal: (Cushion)
  - 104g
- Internal: (Bag for Chassis)
  - 35g
- Internal: (Accessory Bag)
  - 19g
- Internal: (Insert)
  - 39g

System Unit Specifications

RoHS2 Compliance

Hewlett-Packard is committed to compliance with all applicable environmental laws and regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at: http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants - may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) - except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
- Nickel finishes that release greater than 0.5 micro-grams/cm2/week, measured according to EN 1811:1998, are not used on any product surface designed to be frequently handled or touched by users.

Packaging

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted

System Unit Specifications

	on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.
Hewlett-Packard Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html

Intel HD Graphics	
VGA Controller	Integrated
DisplayPort	1.1a; integrated, multimode capable; supports HDCP and audio over DisplayPort
Bus Type	PCI Express x16
RAMDAC	Integrated, 350 MHz
Memory	Intel graphics do not have dedicated memory but utilizes some of the computer's system memory The amount of memory used for graphics depending on the amount of system memory installed, BIOS settings, operating system, and system load. 32 MB is pre-allocated for graphics use at system boot time. Additional memory can be allocated at boot time by the BIOS for PAVP (Protected Audio Video Playback) support for playback of protected video content. Additional memory is allocated for graphics as needed using Intel's Dynamic Video Memory Technology (DVMT), to provide an optimal balance between graphics and system memory use.
Maximum Graphics Memory	Microsoft Windows XP: Up to 1GB Microsoft Windows 7: Up to 1.7GB **NOTE:** the actual amount of maximum graphics memory can be less than the amounts listed above depending upon your computer's configuration.
HW Video Decode	AVC/VC1/MPEG2/JPEG/MJPEG/PAVP
Maximum Color Depth	32 bits/pixel

Graphics/Video API Support	3rd Generation Core processors:
	• The Processor Graphics contains a refresh of the seventh generation graphics core enabling substantial gains in performance and lower power consumption. Up to 16 EU support.
	• Next Generation Intel Clear Video Technology HD Support is a collection of video playback and enhancement features that improve the end user's viewing experience
	  ○ Encode/transcode HD content
	  ○ Playback of high definition content including Blu-ray Disc
	  ○ Superior image quality with sharper, more colorful images
	  ○ Playback of Blu-ray disc S3D content using HDMI (V.1.4 with 3D)
	• DirectX Video Acceleration (DXVA) support for accelerating video processing
	  ○ Full AVC/VC1/MPEG2 HW Decode
	• Advanced Scheduler 2.0, 1.0, XPDM support
	• Windows 7, Windows XP, OSX, Linux OS Support
	• DirectX 11, DirectX 10.1, DirectX 10, DirectX 9 support
	• OpenGL 3.3 support

2nd Generation Core processors:

- The Processor Graphics contains a refresh of the sixth generation graphics core enabling substantial gains in performance and lower power consumption.
- Next Generation Intel Clear Video Technology HD support is a collection of video playback and enhancement features that improve the end user's viewing experience.
  - Encode/transcode HD content
  - Playback of high definition content including Blu-ray Disc
  - Superior image quality with sharper, more colorful images
  - Playback of Blu-ray disc S3D content using HDMI (V.1.4 with 3D)
- DirectX Video Acceleration (DXVA) support for accelerating video processing
  - Full AVC/VC1/MPEG2 HW Decode
- Advanced Scheduler 2.0, 1.0, XPDM support
- Windows 7, XP, Windows Vista, OSX, Linux OS Support
- DirectX 10.1, DirectX 10, DirectX 9 support
- OpenGL 3.0 support

Supported Display Resolutions and Refresh Rates

Note: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP

Resolution	Analog	Digital
640x480	85	60
800x600	85	60
1024x768	85	60
1280x720	85	60
1280x1024	85	60
1440x900	75	60
1600x1200	85	60
1680x1050	75	60
1920x1080	85	60-R
1920x1200	85	60-R
1920x1440	85	N/A
2048x1536	75	N/A
2560x1600	N/A	60*

* Only supported when using a DisplayPort connection
Note: Other resolutions may be available but are not recommended as the may not have been tested and qualified by HP
Note: 60-R denotes reduced blanking timings are used on single-link DVI connections and may be used with other digital connections

NVIDIA NVS 310 Graphics Card

Introduction

The NVIDIA® NVS™ 310 Graphics Card is a PCI Express low profile form factor graphics add-in card targeted as an active low cost graphics solution for the corporate business and enterprise markets.

The NVIDIA® NVS 310 graphics card is an ideal solution for customers requiring a small form factor graphics add-in card for either standard or small form factor PC designs.

Performance and Features

System Unit Specifications

The NVIDIA® NVS 310 Graphics Card offers 512 MB of ultrafast DDR3 memory and is capable of supporting up to 2 displays.

- DisplayPort connector supports multimode technology to support connection to DVI-D, VGA and HDMI monitors with optional adapters in kits NR078AA, FH973AT, BP937AA, AS615AA.
- For a DisplayPort to DisplayPort connections use the optional DisplayPort Cable Kit VN567AA.

Form Factor (H x L) Low Profile: 2.713 × 6.15 in

Bus Type PCI Express x16, 2.0 compliant

Graphics Controller NVIDIA® NVS 310

Memory Size 512 MB DDR3

Memory Clock 875MHz

Memory Bandwidth 14 GB/s

Connectors 2 x DisplayPort 1.2

Maximum Resolution Up to 2560 x 1600 (digital display) per display.

Display Output Up to 2 displays in the following configurations

DisplayPort output:

- Drives two DisplayPort enabled digital display at resolutions up to 2560 × 1600 at 60 Hz with reduced blanking, when connected natively using the 2 DisplayPort connectors on the NVS 310 graphics card
- Supports 2 monitors up to resolution of 1920 × 1200 at 60 Hz with reduced blanking using DisplayPort 1.2 multi stream topology technology.

DVI-D output:

- Drives two digital display at resolutions up to 1920 × 1200 at 60 Hz with reduced blanking using DisplayPort to DVI-D single-link cable adaptors
- Drives two digital display at resolutions up to 2560× 1600 at 60 Hz with reduced blanking using DisplayPort to DVI-D dual-link cable adaptors

HDMI output:

- NVS 310 is capable of driving two high definition (HD) panels up to resolutions of 1920 × 1080P at 60 Hz using DisplayPort to HDMI cable adaptors

VGA display output:

- Drives two analog display at resolutions up to 1920 × 1200 at 60 Hz using DisplayPort to VGA cable adaptors

Max. Power 19.5 W

Display Resolutions and Refresh Rates

Note: other resolutions may be available but are not recommended as they may not have been tested and qualified by HP

Resolution	Maximum Refresh Rates (Hz) by Connection			
	DisplayPort to VGA	DisplayPort to DVI-D	DisplayPort to HDMI	DisplayPort
640 x 480	85	60	60	60
800 x 600	85	60	60	60
1024 x 768	85	60	60	60
1280 x 720	85	60	60	60
1280 x 1024	85	60	60	60

System Unit Specifications

1440 x 900	75	60	60	60
1600 x 1200	60	60	60	60
1680 x 1050	60	60	60	60
1920 x 1080	60-R	60-R	60	60
1920 x 1200	60-R	60-R		60
1920 x 1440				60
2048 x 1536				60
2560 x 1600				60

Note: 60-R denotes reduced blanking timings are used on single link DVI connections and may be used with other digital connections.

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